

ART. VI. *An account of two Cases of Congenital Division of the Lip and Palate occurring in the same family, in which operations were performed.* By ISAAC PARRISH, M. D., one of the Surgeons of the Wills' Hospital. [With a Plate.]

The following history of two cases of a singular variety of malformation, called in common language, hare-lip, has been drawn up, more particularly with a view of pointing out the means adopted for their relief, than of attempting an elaborate description of the several varieties of this disgusting deformity.*

The subjects of the present notice were the children of Robert G. Croft, a farmer, residing in the interior of this state. They were born within a year of each other, the elder, a boy, being seventeen months old, and the younger, a girl, five months. The former was the subject of a double hare-lip, with cleft in the palate of a most aggravated form; in the latter a similar defect existed on one side.

The parents were young, healthy, and well formed. They had two older children, in whose organization no imperfection existed. The cause of the distressing defect in the younger children must of course be a matter of speculation. The mother, as is usual on such occasions, could give an explanation of the phenomenon, which appeared satisfactory to her own mind, however insufficient it might be deemed by the less credulous. It is not necessary to narrate here the transaction to which she referred the afflictions of her children, it may be sufficient to state that about the sixth or seventh month of pregnancy, she experienced a fright, and when her child was born he was found to be deformed in the manner stated. The anxiety and trouble which this circumstance occasioned her, determined, according to her belief, a defect in her succeeding child.

Being incapable of drawing nutriment from the breast of the mother, the children were sustained with great difficulty during the first few weeks of their lives; they, however, soon acquired a facility in taking nourishment, and at the ages mentioned were brought to Philadelphia and placed under my care.

The case of the boy, was the most appalling. The deficiency in the lip on both sides was very great, and the only point in which we could rely for a union of the opposing surfaces, was in a narrow slip of in-

*The reader who feels curious on the subject of hare-lip, will do well to consult an interesting article on Staphyloraphy, published in the last number of this Journal, by Dr. John P. Mettauer, of Virginia.

tegument of an oval form, attached to the tip of the nose, (see *Pl. II., Fig. 2, a,*) and covering an insulated portion of the alveolar process and gum, which came down in the middle of the wide chasm in the roof of the mouth.

The nostrils and lip on either side were continuous, and the middle cartilage of the nose was almost wanting, giving to the nose a flattened appearance, which tended very much to increase the deformity. The two upper incisor teeth had emerged from the gum of the insulated portion of bone before referred to. The accompanying engraving, *Pl. II., Figs. 1 and 2*, conveys a very good idea of the external appearance of these parts.*

Corresponding to this external deformity, was a cleft extending on either side through the alveolar process, the palatine process of the superior maxillary bone, the palate bone, the soft palate and uvula, forming a chasm about an inch wide. That portion of the bones which forms the nasal floor was deficient, throwing the two cavities of the nose and mouth into one.

On opening the mouth, the vomer could be seen throughout the whole extent, occupying its usual position, and forming a sort of septum between the two cavities, it inclined a little to the right, thus diminishing the width of the cleft on that side. The dividing line extended with remarkable exactness through the soft palate and uvula, separating them in the median line. When the mouth was wide open the opposing surfaces of the uvula would meet so as to present the appearance of an elliptical opening in the soft palate. This remarkable deviation from the natural structure of the parts did not appear to have any injurious effect upon the general health of the child, and when he came under my care he was as robust and vigorous as could be desired. He had never been able to take solid food, but ate very freely of Indian mush and milk, on which he subsisted. While eating, a portion of his food would frequently find its way through the nose.

After consultation with my father, Drs. Thomas Harris and J. R. Barton, it was deemed advisable to attempt an operation for the relief of this distressing deformity, and thereby to afford a chance for the subsequent closure of the cleft in the bones.

The age of the child, the remarkable deficiency in the lip, the small portion of integument to serve as the point of union, and the contact of this portion with the tip of the nose, determined us to perform

*The engravings are from an accurate drawing, executed by John Collins, of this city, a young artist whose success in this department, has already gained for him an enviable reputation.

three operations, with suitable intervals between them, rather than to attempt to accomplish the whole at once.

The object of the first operation was to unite the central flap of integument with the corresponding surface of the lip on the right side. This I performed, assisted by Drs. T. Harris and Norris, and in the presence of several medical students.

The free portion of the lip being drawn out by the fingers, its edge was excised by a firm stroke with a pair of sharp scissors; this exposed the greater portion of the surface which was to be attached to the opposite side. The edge of the upper extremity of the divided portion which extended under the nostril, was exposed by cutting upward with a small sharp scalpel, so as to secure union at its upper angle. The opposite side was denuded by a scalpel, the incision being made about four lines from the edge of the button-shaped process; the upper extremity was exposed by cutting upward under the nostril, as on the other side. Considerable hemorrhage from the coronary arteries followed these incisions; this was easily arrested by pressure between the fingers of an assistant. A piece of polished steel wire, the size of a common knitting-needle, about four inches long and sharp pointed, was then passed through the lip at its lower portion, about half an inch from its cut edge, carried over to the opposite side, and being inserted in a position to secure the accurate coaptation of the opposing surfaces, was pushed through this process between the gum and integument, and brought out at its opposite side. The parts being adjusted, they were retained in their position by a few turns of the silk ligature, while the needle was passed in a similar manner above. The ligature was then passed freely around the pins, taking care not to draw it so firmly as to impede the circulation between the cut surfaces. The wires were then cut off within half an inch of the ligatures, by a pair of strong sharp cutting nippers, and the operation was completed.

Owing to the extreme restlessness of the child, and his disposition to seize the pins, we were obliged to secure his arms by a firm band passed around the body. His mother was directed to give him small and repeated doses of laudanum, until sleep was induced. Very little constitutional disturbance followed the operation, he passed a good night, and on the following day was lively and playful, and took his mush as usual.

On the fourth day after the operation, the little patient was feverish and restless, the lip was considerably swollen, and a few drops of pus were observed around the needles, circumstances which indicated the propriety of removing them; this was accordingly done in the

morning, and the parts covered with strips of adhesive plaster. In the evening the strips were taken off, bringing with them the ligature, and exposing a firm union throughout the extent of the divided surfaces.

At the end of fifteen days, the parts being firmly consolidated, and entirely free from soreness, a second operation was performed upon the left side. The success of this was rendered more doubtful from the relation which the parts now sustained to each other. The central flap which had been attached to the lip by the first operation, being, from its connexions, to a certain extent moveable, had been drawn from its position in the median line over toward the right side, and hence the distance between the surfaces, now to be united, was increased.

The operation was performed with the assistance of Dr. J. R. Barton, in the presence of Drs. Norris and Pepper, and several medical students. The limbs of the child being firmly secured, by placing him in a bag, the open end of which was drawn around his chest, the lip was first separated from the gum by a few strokes of the scalpel, in order to increase its mobility; its free edge was then clipped off with the scissors, the upper portion, under the nostril, being denuded with the scalpel, as on the opposite side. The corresponding edge of the flap was excised with the scalpel, but owing to the integument being drawn a little off from the gum, by its union with the lip on the other side, it was necessary to notch out a portion of the gum under the nostril, in order to present a raw surface to the corresponding side, with which it was to be brought in contact. The needles were then passed through the lip at least half an inch from its cut edge, and passed over to the opposite side, their points being brought out beyond the cicatrix which was made by the first operation. The two surfaces being brought into contact, the ligatures were applied in the usual manner. The great distance of the surfaces thus approximated, contracted the corner of the mouth to such an extent as to excite our fears lest the wires drawn upon by so strong a force, might cut their way through the soft parts before firm adhesion could be established.

Fortunately, however, this did not occur. The case progressed favourably, but little constitutional disturbance following the operation; and on the sixth day the needles and ligatures were removed, exposing a firm cicatrix throughout the divided portion.

The lip being firmly united, our attention was now turned to the nose. This part being united to the central flap, which had formed the point of union for the edges of the fissure in the lip, was now drawn downward and a little backward from its original position, (see *Pl. II., Fig. 4.*)

and made to assume a more compressed and flattened appearance, which is well represented in the engraving.

To remedy this deformity it has been recommended to separate the tip of the nose from the lip by an incision with a scalpel, and to prevent union by the first intention by the introduction of dressings between the cut surfaces. Several objections to this plan suggesting themselves to Dr. Barton, he has originated the practice of the ligature, which he has successfully adopted on several occasions, and which was used in the present instance. The objections referred to are the following:

Firstly. By making a straight incision between the tip of the nose and lip, even if the parts heal, without the occurrence of union by the first intention, the divided surface would present a sort of shelving edge, giving to the tip of the nose a pointed extremity, instead of presenting that rotundity so necessary to the symmetry of the features.

Secondly. The difficulty of maintaining the necessary dressings between the cut surfaces, especially in a restless child.

Thirdly. The occurrence of hemorrhage from a small vessel, which is necessarily divided in the operation, and which proves very troublesome to the surgeon, especially in operations upon children.

The ligature is free from any of these objections; is equally certain in its effect, and in the case of a restless child more so, and is very easily applied.

At the end of sixteen days after the second operation, the parts were prepared, and the operation was performed.

A curved needle, armed with a strong silk ligature well waxed, was passed about three or four lines behind the tip of the nose, the ends being drawn out, (see *Pl. II., Fig. 3.*) were firmly tied, so as to include the intervening portion of integument.

The parents were directed to draw upon the ligature every morning, to keep up irritation. At the end of two weeks the ligature had so nearly cut its way through, that a clip with the scissors, through the undivided part, completed the operation.

The effect of the operation was to liberate the tip of the nose from its connexion with the lip, and very much to improve the appearance of the child. The engraving conveys a good idea of the appearance of the parts, after the completion of these operations.

The influence which this operation, when performed at a very early age, may have upon the closure of the bony cleft is an important consideration. The rarity of this kind of malformation, and the very few cases in which the subjects of it are sustained during infancy, would perhaps prevent us from arriving at a conclusion on this point, sus-

tained by any considerable number of facts. It seems probable, however, that the firm union of the lip over the pliant bony structure to which it is attached, would, by its steady pressure, tend to mould the bones into their natural form, at least during that period where the growth of parts is constantly advancing.

In the present case the effect produced upon the bones in the short space of six weeks after the operation, was very gratifying. The anterior portion of the cleft on the right side, was very nearly obliterated for the space of at least half an inch, and the improvement on the left side was very obvious.

The result may, in part, be explained from the fact, that the insulated portion of bone, which projected forward in the centre of the chasm, was drawn backward toward the roof of the mouth, by the attachment of the integument covering it, to the edges of the fissure in the lip; hence diminishing the width of the bony chasm at its anterior portion. This change in the position of the parts would tend also to block up the opening between the nose and mouth in front, and thus to improve at once the speech and power of mastication of the patient. The effect of this change in the case before us, was very obvious. The little patient who, before the operation, had not eaten any solid food, now ate, with avidity, potatoes, apples, &c.

In the case of a young man, who was the subject of the form of hare-lip now under consideration, and who was recently operated upon by Dr. T. Harris, at the Pennsylvania Hospital, the same improvement was manifest in a very short period after the operation; the anterior portion of the fissure had almost closed up, and the speech and mastication of the patient were considerably improved before he left the hospital.

Another method of performing the operation for double hare-lip, has been recommended upon high authority, and occasionally practiced. It consists in cutting away the whole of the insulated portion of bone and integument, which projects in the middle of the chasm, and thus uniting the opposing surfaces of the lip by needles and sutures, as in ordinary cases. Several serious objections seem, to me, to exist against this plan, viz:

Firstly. By the excision of the central portion, the distance between the surfaces to be united is considerably increased; and hence the chances of union between them is diminished.

Secondly. If the first attempt at union should fail, and the edges of the wound should gap open, they must be again denuded, thus widening the breach still farther, and rendering the success of a second operation more doubtful.

Thirdly. Should the divided edges be firmly united, the anterior portion of the lip, being unsupported behind, would give to the mouth a flabby and flattened appearance, which, to say the least of it, would be very unsightly.

Fourthly. If the views expressed above, of the influence of this central abutment, in producing a closure in the bony fissures be correct, then its removal would be highly injudicious, as it would prevent the most important result which could follow the operation.

In adults, who are the subjects of this malformation, it is usual to unite the two sides to the central flap, at one operation. Where the parts are fully developed, and the patient is capable of appreciating the importance of doing his part, toward promoting the objects of the surgeon, this is perhaps the best plan.

It was successfully performed in two cases at the Pennsylvania Hospital, during the past winter, one a patient of Dr. Randolph, and the other of Dr. T. Harris. In the case of a child, however, the propriety of uniting one side at a time, is sufficiently obvious, upon the grounds already stated.

CASE II.—The younger child was a female infant, of five months old, of delicate frame, and lax fibre. In this case the malformation was upon the left side, the division of the lip was as great in proportion to the size of the child as it was on either side in the other case. The fissure in the bones corresponded in width with that in the lip, and extended through the soft palate.

The cleft in the gum was of an irregular shape, the portion on the nasal side projected forward, and terminated in a pointed extremity of an angular shape, which approached very near to the opposing surface. The face on the deformed side was very much disfigured, one-half of the nose being smaller and sinking below the level of the other; the ear on this side was also considerably smaller than its fellow.

The child had been delicate from birth, and was subject to frequent attacks of diarrhoea and colic, for which the mother had frequently administered laudanum, sometimes in doses of twenty drops. Soon after their arrival in the city, the child became affected with diarrhoea, by which her strength was much reduced.

Enemata of rich flaxseed mucilage administered several times during the day, and a diet of arrow-root, or ground rice boiled in milk, was substituted for Indian meal gruel, upon which the child mainly subsisted. The large doses of laudanum, to which she had been accustomed, were omitted, and lac assafoetida was substituted.

Under this course the patient improved rapidly, and a day was fixed upon for an operation. Before the appointed time a relapse

occurred, of which she was relieved by the addition of $\frac{1}{4}$ gr. doses of calomel, to the other treatment, continued until the condition of the bowels was corrected.

12th Mo. 19th. Assisted by Dr. Kirkbride, and in the presence of several medical students, I operated in the following manner: The lip was dissected off from the gum to which it was adherent; its edges were then exposed with the scissors, the portion under the nostril being denuded with a scalpel. The cut surfaces were brought together, and pins of steel wire passed below and above; a waxed silk ligature was then applied with moderate firmness around the pins. At the close of the third day the pins were removed, the ligature remaining until the following day; the parts were secured by adhesive strips.

On the removal of the ligatures, the union between the divided edges was complete throughout the greater part of the lip. At the upper angle under the nostril, the edges were held together by a coating of lymph sufficiently firm to retain them in apposition.

Adhesive strips were firmly drawn over the wound, with the hope of establishing the union more firmly above. After this period the child became very restless and fretful, the diarrhœa returned, and frequent "crying spells" tended very much to disturb the dressings.

On removing the plasters on the 27th, the upper angle of the wound had separated to the distance of three or four lines, the edges below being firmly united. The idea of establishing union above by any mode of dressing, was now abandoned, and the wound was allowed to remain open until the soreness should so far subside as to admit of another operation.

At the end of about three weeks, this was done, by denuding with a scalpel the united portion, and passing a curved needle, armed with a silk ligature, through the lip on each side—the ligature was tied in front, and allowed to remain until it had cut its way through.

Before the wound had entirely healed the family left the city, but I have since heard that the operation proved entirely successful.

The faulty union after the first operation in this case, may be attributed mainly to the enfeebled state of the infant's system, a condition which would have precluded its performance had it not been that the parents were a long distance from their home, and were exceedingly anxious to have the operations completed before they returned. Another circumstance which appeared to me to favour this result, was the angular projection of the gum on the nasal side of the cleft. This projection formed a pointed extremity which pressed against the upper and posterior surface of the wound, and must have tended to prevent union at this point.